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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/260,536	06/16/1994	ROBERT M. LORENCE	57704	4057

7590 02/10/2003

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EXAMINER
SCHEINER, LAURIE A

ART UNIT	PAPER NUMBER
1648	

DATE MAILED: 02/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/260,536	Lorence et al.
Examiner	**Art Unit**
Laurie Scheiner	1648

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Jan 10, 2003*.

2a) ☒ This action is **FINAL.** 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *318, 320, 322, 323, 328, and 331-333* is/are pending in the application.

4a) Of the above, claim(s) *331-333* is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *318, 320, 322, 323, and 328* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Claims 318, 320, 322, 323, 328 and 331-333 are pending. Claims 322 and 328 are duplicates. Claims 331-333 are withdrawn since they were directed to an invention that was independent or distinct from the invention originally claimed.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The term "moderate" in claim 318 is a relative term which renders the claim indefinite. The term "moderate" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Thus, other than 73-T, strain M, Mass-MK107 which is described as being "less virulent" relative to 73-T, is the sole NDV taught in the specification. Therefore, it is unclear if MK107 is a less virulent (than 73-T) velogenic strain?

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 318, 320, 322, 323 and 328 are rejected under 35 U.S.C. 112, first paragraph, because the specification does not reasonably enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. That is, while being enabling for a method of treating...with NDV 73-T, the specification does not reasonably provide enablement for any NDV strain of moderate virulence. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. That is, the specification predominantly teaches the employment of NDV 73-T strain (velogenic?) which is not sufficiently enabling for Newcastle disease viruses of moderate virulence. Moreover, moderate virulence has not been taught; strain M (Mass-MK107) is described at page 27 as being less virulent than NDV 73-T, only. One cannot determine where "moderate" falls within the continuum of virulence since the term has not been defined outside of a relative comparison with NDV 73-T. Also intravenous administration has not been taught in the specification. Again, the specification is not enabled broadly for the recitation of "moderate", nor is the term defined in the original disclosure. It appears that applicants have only disclosed one example of a particular species having less virulence with respect to NDV 73-T. Claims must be commensurate in scope with the specification and one relative example of a control is not enabling for the use of the class or genus of NDVs having moderate virulence. In ex parte Jackson, 217 USPQ 805, even a "description of several newly discovered strains of bacteria having one particularly desirable metabolic property in terms of conventionally measured culture characteristics and number of metabolic and physiological properties does not enable one of ordinary skill in the relevant art to independently discover additional strains having same specific, desirable metabolic property." Thus, the degree of

experimentation involved in locating new NDVs which would function in the claimed methods is undue in light of enablement requirement of 35 USC 112. The results achieved in instant examples are not predictive of the effect of any NDV having moderate virulence on mammalian cancers as claimed. Furthermore, examples have not been set forth which would support enablement of claims drawn to administration of any "moderate Newcastle disease viruses" to mammals.

Applicants are reminded of the legal considerations governing enablement determinations pertaining to undue experimentation as disclosed in *In re Wands,* 8 U.S.P.Q. 546 (PTO Bd. Pat. App. Int., 1986). The courts concluded that several factual inquiries should be considered when making such assessments including the quantity of experimentation necessary, the amount of direction or guidance presented, the presence or absence of working examples, the nature of the invention, the state of the prior art, the relative skill of those in that art, the predictability or unpredictability of the art and the breadth of the claims. *In re Rainer,* 52 C.C.P.A. 1593, 347 F.2d 574, 146 U.S.P.Q. 218 (1965). Applicants are also reminded that the broad recitation of "cancer" is not enabled by the specification as originally filed. Again, it appears that fibrosarcoma would be the sole cancer type finding enablement.

The disclosure fails to meet the legal requirements dictating that the scope of the claims must bear a reasonable correlation to the scope of enablement provided by the specification. *In re Fisher,* 427 F.2d 833, 839, 166 U.S.P.Q. 18, 24 (C.C.P.A. 1970). *In re Vaeck,* 20 U.S.P.Q.2d 1438 (C.A.F.C. 1991). *In re Angstadt*, 537 F.2d 498, 502-03, 190 U.S.P.Q. 214, 218 (C.C.P.A. 1976). The court stated in *In re Vaeck* that "there must be sufficient disclosure, either through illustrative examples or terminology, to teach those of ordinary skill how to make and how to use the invention as broadly as it is claimed. This means that the disclosure must adequately guide

the art worker to determine, without undue experimentation, which species among all those encompassed by the claimed genus possess the disclosed utility. Where, as here, a claimed genus represents an undefined group of viruses, the required level of disclosure will be greater than, for example, the disclosure of an invention involving a "predictable" factor such as a mechanical or electrical element."

In summation, the disclosure fails to provide sufficient guidance pertaining to the molecular determinants modulating the cancer cytolytic activity of any given moderate virulence NDV, the disclosure fails to provide sufficient guidance pertaining to those variants or derivatives that can reasonably be expected to have and retain cytolytic activity. Accordingly, when all the aforementioned factors are considered together, it would clearly require undue experimentation to practice the claimed invention.

Claims 318, 320, 322, 323 and 328 are rejected under 35 U.S.C. 112, first paragraph, as being drawn to subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. *In re Rasmussen,* 650 F.2d 1212, 211 U.S.P.Q. 323 (C.C.P.A. 1981). *In re Wertheim,* 541 F.2d 257, 191 U.S.P.Q. 90 (C.C.P.A. 1976). Treatment of cancer in a mammal by administering a moderate virulence NDV is contemplated. Additional limitations are provided concerning dosage and intravenous administration. The written description requirement under Section 112, first paragraph, sets forth that the claimed subject matter must be supported by an adequate written description that is sufficient to enable anyone skilled in the art to make and use the invention. The courts have concluded that the specification must demonstrate that the inventor(s) had possession of the claimed invention as of the filing date relied upon. Although the claimed subject matter need not

be described identically, the disclosure relied upon must convey to those skilled in the art that applicants had invented the subject matter claimed. *In re Wilder, et al.,* 222 U.S.P.Q. 369 (C.A.F.C. 1984). *In re Werthheim, et al.,* 191 U.S.P.Q. 90 (C.C.P.A. 1976). *In re Driscoll,* 195 U.S.P.Q. 434 (C.C.P.A. 1977). *Utter v. Hiraga,* 6 U.S.P.Q.2d 1709 (C.A.F.C. 1988). *University of California v. Eli Lilly,* 119 F.3d 1559, 43 U.S.P.Q.2d 1398 (Fed. Cir. 1997). *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.,* 18 U.S.P.Q.2d 1016-1031 (C.A.F.C. 1991). *Fiers v. Sugano,* 25 U.S.P.Q.2d 1601-1607 (C.A.F.C. 1993). *In re Bell,* 26 U.S.P.Q.2d 1529-1532 (C.A.F.C. 1993). *In re Deuel,* 34 U.S.P.Q.2d 1210-1216 (C.A.F.C. 1995).

Applicants' disclosure fails to provide adequate written support for the invention as broadly claimed. That is, applicants' claims encompass a method employing any NDV of moderate virulence. However, the disclosure predominantly provides discussions and examples of NDV 73-T (a velogenic strain?), rather than a strain having moderate virulence. Again, moderate has not been defined in the specification since the focus of the specification as originally filed is not directed to strains having moderate virulence. As such, limiting the scope of the claims commensurate with that which has been described would be acceptable. Thus, a method of treating fibrosarcoma (HT 1080) in a mammal by administering NDV strain M, Mass-MK107 intralesionally in an amount of 1.0×10^8 PFU would be commensurate with the original scope of enablement as filed. It is further noted that the specification fails to teach the dosages set forth by claim 323. Again, the disclosure fails to provide an adequate written description for subject matter encompassing NDVs having moderate virulence which would function similarly to NDV strain M (Mass-MK107) with respect to cancer (fibrosarcoma) treatment. It is asserted (please also see below) that strain MK107 does not find support in the specification as originally filed since only strain M (Mass-MK107) is taught. The Peeples' declaration implies that instant

strain M, Mass-MK107 and Mass-MK (Schloer et al.) are the same strain yet it is clear based on reported respective mean death rates that Mass-Mk and MK107 cannot be the same. Again, claim 323 does not find support since a dose of about 4 X 10^8 to 4 X 10^{10} PFU/kg has not been set forth by the specification.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 318, 320, 322, 323 and 328 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Lorence et al. (1988) for reasons of record.

Claims 318, 320, 322, 323 and 328 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Reichard et al. (1992) for reasons of record.

Claims 318, 320, 322, 323 and 328 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Reichard et al. (1992) for reasons of record.

Applicant's arguments filed December 6, 2002 have been fully considered but they are not persuasive. The examiner's attention has been directed to the Peeples' declaration in response to the outstanding rejection under 35 USC 112, second paragraph.

Although the Peeples' declaration was sufficient to overcome the rejection in application 08/055,519, the examiner, upon further consideration, has found the statements contained therein to be inconsistent with the cited Schloer et al. and Hanson et al. references. Dr. Peeples concludes that the instant disclosure conveys to one of skill the concept of treating cancer in a mammal with a "mesogenic" NDV. Dr. Peeples' draws this conclusion since the disclosure

describes NDV as useful to treat and detect cancer in mammals and because the entire NDV group is comprised of lentogenic, mesogenic, and velogenic, the instant disclosure necessarily conveys to one of skill that each of these three categories is inherently included. That is, Dr. Peeples asserts that which is specifically claimed with respect to mesogenic type NDV is obvious and inherent in light of the instant teaching of all three categories of NDV as useful in the treatment of cancer. As an aside, it is noted that applicants do not claim a treatment method employing a lentogenic NDV despite the fact that the specification would support said limitation based on the the line of reasoning provided in the Peeples' declaration. Additionally, Dr. Peeples' fails to directly state that instant NDV strain M (Mass-MK107) is mesogenic despite the fact that he supplied said strain to applicants.

The examiner asserts that not only is the above reasoning flawed, it is contrary to well settled patent law. That is, it is well settled that the claimed subject matter need not be supported by an explicit, word for word recitation, but something more than a suggestion is needed to satisfy the requirement for an adequate written description. As set forth in Lockwood v. American Airlines Inc., 107 F.3d 1565, 1571-1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997):

> It is the disclosures of the applications that count. Entitlement to a filing date does not extend to subject matter which is not disclosed, but would be obvious over what is expressly disclosed. It extends only to that which is disclosed. While the meaning of terms, phrases, or diagrams in a disclosure is to be explained or interpreted from the vantage point of one skilled in the art, all the limitations must appear in the specification. The question is not whether a claimed invention is an obvious variant of that which is disclosed in the specification. Rather, a prior application itself must describe an invention, and do so in sufficient detail that one skilled in the art can clearly conclude that the inventor invented the claimed invention as of the filing date sought. . . [A]ll that is necessary to satisfy the description requirement is to show that one is "in possession" of the invention . . . One shows that one is "in possession" of the invention by describing the invention, with all its claimed limitations, not that which makes it obvious. . . Although the exact terms need not be used in haec verba, . .

> . the specification must contain an equivalent description of the claimed subject matter. [Citations omitted]
>
> . . .
>
> It is not sufficient for purposes of the written description requirement of Section 112 that the disclosure, when combined with knowledge in the art, would lead one to speculate as to modifications that the inventor might have envisioned, but failed to disclose. Each application in the chain must describe the claimed features.

That the specification must contain a written description of that which is now claimed. Fiers v. Revel, 984 F.2d 1164, 1170, 25 USPQ2d 1601, 1605 (Fed. Cir. 1993). Whether the disclosure(s) (instant, and now abandoned application 08/055,519) relied on "reasonably convey [ ] to the artisan that the inventor had possession at that time" of that which is now claimed is a question of fact.

The specification refers to NDV strain M (Mass-MK107) which is moderate with respect to 73-T, while Hanson et al. teach a mesogenic strain MK107 (L), and Schloer et al. teach a mesogenic Mass-MK. It is unclear if either of the two cited strains (MK107 (L), Mass-MK) is identical to the instantly disclosed NDV strain M (Mass-MK107) since the two respective referenced strains cannot be identical to each other based on their different respective mean death times. It appears that Dr. Peeples asserts that instant strain M (Mass-MK107) is the same as Mass-MK of Schloer et al. This is not convincing for several reasons including nomenclature difference, and possible differences in mutation (25 years have lapsed between the publication and the filing of the first application). Moreover, although Hanson et al's MK107 (L) having a mean death time of 60 hours is classified as mesogenic, it is noted that both mesogenic and velogenic strains may have a 60 hour mean death time. It is also noted that the examiner was unable to obtain a copy of the cited Dardiri et al. (1961) reference since the citation is incomplete or incorrect.

Again, it is asserted that the velogenic class is comprised of various NDV strains sharing a range of virulence falling within parameters based on chicken embryos killed at 40 to 60 hours at the minimal lethal dose. The specification teaches that instant strain M, Mass-MK107 is of relatively moderate virulence **relative** to 73-T. That is, the specification merely accomplishes teaching that M, Mass-MK107 is less virulent than 73-T, but does not teach that M, Mass-MK107 falls below the velogenic virulence threshold and is therefore mesogenic. Moreover, if M, Mass-MK107 were shown to be mesogenic, a single strain is not representative of an entire class of NDV (mesogenic).

Applicants' argument that examples set forth in pending application Serial No. 09/292,376 provide enablement for that which is instantly claimed is unpersuasive since enablement must be at the time of the invention. Moreover, application Serial No. 09/292,376 has been abandoned prior to the filing of applicants' current response.

Applicants clearly state that "[i]ntravenous administration is taught in the subject specification". See page 11 second full paragraph..."

The examiner contends that no recitation of intravenous is found on page 11 of the instant specification.

Applicants point to Example 2 for support of various modes of administration. However, Example 2 employs strain 73-T (not a moderate virus).

With respect to the art rejections under 35 USC 102, applicants argue that the respective references fail to teach the use of a strain of moderate virulence.

The examiner argues the references cumulatively by contending that applicants' disclosure fails to define moderate virulence. That strain M, Mass-MK107 is moderate with respect to 73-T does not necessarily preclude strain 73-T from being of moderate virulence with respect to another more virulent NDV strain.

Applicants argue that in Reichard et al., mammals with cancer were not treated.

The examiner asserts that Reichard et al., at page 450, final paragraph, teach that "the tumor site" was then injected...

Applicants argue an instant dose for administration which has never been set forth in the specification. That is, applicants have never taught a 4 X 10^8 PFU/kg dose of virus.

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.129(a) and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.129(a). Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the submission under 37 CFR 1.129(a). See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group 1600 receptionist whose telephone number is (703) 308-0196.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laurie Scheiner, whose telephone number is (703) 308-1122. Due to a flexible work schedule, the examiner's hours typically vary each day. However, the examiner can normally be reached Monday thru Friday. If attempts to reach the examiner by telephone

are unsuccessful, the examiner's supervisor, James Housel, can be reached on (703) 308-4027.

Correspondence related to this application may be submitted to Group 1600 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). Official communications should be directed toward one of the following Group 1600 fax numbers: (703) 308-4242, (703) 305-3014, (703) 872-9306 or (703) 872-9307. Informal communications may be submitted directly to the Examiner through the following fax number: (703) 746-5226.

Laurie Scheiner/LAS
February 4, 2003

LAURIE SCHEINER
PRIMARY EXAMINER